What Is Claimed Is:

1. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier in a direction to traverse a track on the information carrier;

detracking detection means, which generates a signal according to the positional relationship between the focal spot of the light beam and a track;

tracking control means, which drives said movement means according to the signal output from said detracking detection means, and executes control such that the focal spot of the light beam scans on a track; and,

track jumping means, which moves the focal spot of the light beam from a first track on the information carrier to an adjacent second track; and wherein

said track jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, and amplitude measurement means which measures the amplitude of the signal output from said detracking detection means during operation of said acceleration means;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement means; and,

said deceleration means modifies the length of time of the deceleration signal based on the amplitude measured by said amplitude measurement means.

2. The optical disc device according to Claim 1, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

3. The optical disc device according to Claim 1, wherein the deceleration signal output by said deceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference deceleration time.

4. The optical disc device according to Claim 1, wherein said tracking control means comprises gain switching means which modifies the gain intersection point of the control loop, and said tracking control means switches the setting of said gain switching means for a prescribed length of time after operation of the track jumping means according to the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude.

5. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier in a direction to traverse a track on the information carrier;

detracking detection means, which generates a signal according to the positional relationship between the focal spot of the light beam and a track;

tracking control means, which drives said movement means according to the signal output from said detracking detection means, and executes control such that the focal spot of the light beam scans on a track; and,

track jumping means, which moves the focal spot of the light beam from a first track on the information carrier to an adjacent second track; and wherein

said track jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, first amplitude measurement means which measures the amplitude of the signal output from said detracking detection means during operation of said acceleration means, and second amplitude measurement means which measures the amplitude of the signal output from said detracking detection means during operation of said deceleration means;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement means; and,

said deceleration means modifies the length of time of the deceleration signal based on the amplitude measured by said second amplitude measurement means.

6. The optical disc device according to Claim 5, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said first amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

7. The optical disc device according to Claim 5, wherein the deceleration signal output by said deceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude with a prescribed reference deceleration time.

8. The optical disc device according to Claim 5, wherein said tracking control means comprises gain switching means which modifies the gain intersection point of the control loop, and said tracking control means switches the setting of said gain switching means for a prescribed length of time after operation of the track jumping means according to the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude.

9. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier in a direction to traverse a track on the information carrier;

detracking detection means, which generates a signal according to the positional relationship between the focal spot of the light beam and a track;

tracking control means, which drives said movement means according to the signal output from said detracking detection means, and executes control such that the focal spot of the light beam scans on a track; and,

track jumping means, which moves the focal spot of the light beam from a first track on the information carrier to an adjacent second track; and wherein

said track jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, amplitude measurement means which measures the amplitude of the signal output from said detracking detection means during operation of said acceleration means, and movement time measurement means which measures the length of time from the time of initiation of movement of the light beam by said track jumping means until a prescribed location between said first track and said second track is reached;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement means; and,

said deceleration means modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said amplitude measurement means and on the time measured by said movement time measurement means.

10. The optical disc device according to Claim 9, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

11. The optical disc device according to Claim 9, wherein the deceleration signal output by said deceleration means comprises a pulse signal, the time width of said pulse signal is set by multiplying the amplitude ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference deceleration time, and the peak value of said pulse signal is set by multiplying the ratio of a time width, obtained by multiplying said amplitude ratio by a reference movement time, to the movement time measured by said movement time measurement means, with a prescribed reference peak value.

12. The optical disc device according to Claim 9, wherein said tracking control means comprises gain switching

means which modifies the gain intersection point of the control loop, and said tracking control means switches the setting of said gain switching means for a prescribed length of time after operation of the track jumping means according to the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude.

13. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier in a direction to traverse a track on the information carrier;

detracking detection means, which generates a signal according to the positional relationship between the focal spot of the light beam and a track;

tracking control means, which drives said movement means according to the signal output from said detracking detection means, and executes control such that the focal spot of the light beam scans on a track; and,

track jumping means, which moves the focal spot of the light beam from a first track on the information carrier to an adjacent second track; and wherein

said track jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, first amplitude measurement means which measures the amplitude of the signal output from said detracking detection

means during operation of said acceleration means, second amplitude measurement means which measures the amplitude of the signal output from said detracking detection means during operation of said deceleration means, and movement time measurement means which measures the length of time from the time of initiation of movement of the light beam by said track jumping means until a prescribed location between said first track and said second track is reached;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement means; and,

said deceleration means modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said second amplitude measurement means and on the time measured by said movement time measurement means.

14. The optical disc device according to Claim 13, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said first amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

15. The optical disc device according to Claim 13, wherein the deceleration signal output by said deceleration means comprises a pulse signal, the time width of said pulse signal is set by multiplying the amplitude ratio of the amplitude measured by said second amplitude measurement means

to a reference amplitude with a prescribed reference deceleration time, and the peak value of said pulse signal is set by multiplying the ratio of a time width, obtained by multiplying said amplitude ratio by a reference movement time, to the movement time measured by said movement time measurement means, with a prescribed reference peak value.

16. The optical disc device according to Claim 13, wherein said tracking control means comprises gain switching means which modifies the gain intersection point of the control loop, and said tracking control means switches the setting of said gain switching means for a prescribed length of time after operation of the track jumping means according to the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude.

17. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier having a plurality of stacked data surfaces in a direction substantially perpendicular to the data surfaces;

convergence state detection means, which generates a signal according to the convergence state of the light beam;

focusing control means, which drives said movement means according to the signal output from said convergence state detection means, and controls the focus position of the light beam so as to be substantially constant; and,

focus jumping means, which moves the focal spot of the light beam from a first data surface on the information carrier to an adjacent second data surface; and wherein

said focus jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, and amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said acceleration means;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement means; and,

said deceleration means modifies the length of time of the deceleration signal based on the amplitude measured by said amplitude measurement means.

18. The optical disc device according to Claim 17, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

19. The optical disc device according to Claim 17, wherein the deceleration signal output by said deceleration means comprises a pulse signal of prescribed peak value, and

the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference deceleration time.

20. The optical disc device according to Claim 17, wherein said focusing control means comprises gain switching means which modifies the gain intersection point of the control loop, and said focusing control means switches the setting of said gain switching means for a prescribed length of time after operation of the focus jumping means according to the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude.

21. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier having a plurality of stacked data surfaces in a direction substantially perpendicular to the data surfaces;

convergence state detection means, which generates a signal according to the convergence state of the light beam;

focusing control means, which drives said movement means according to the signal output from said convergence state detection means, and controls the focus position of the light beam so as to be substantially constant; and,

focus jumping means, which moves the focal spot of the light beam from a first data surface on the information carrier to an adjacent second data surface; and wherein

said focus jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, first amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said acceleration means, and second amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said deceleration means;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement means; and,

said deceleration means modifies the length of time of the deceleration signal based on the amplitude measured by said second amplitude measurement means.

22. The optical disc device according to Claim 21, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said first amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

23. The optical disc device according to Claim 21, wherein the deceleration signal output by said deceleration means comprises a pulse signal of prescribed peak value, and

the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude with a prescribed reference deceleration time.

24. The optical disc device according to Claim 21, wherein said focusing control means comprises gain switching means which modifies the gain intersection point of the control loop, and said focusing control means switches the setting of said gain switching means for a prescribed length of time after operation of the focus jumping means according to the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude.

25. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier having a plurality of stacked data surfaces in a direction substantially perpendicular to the data surfaces;

convergence state detection means, which generates a signal according to the convergence state of the light beam;

focusing control means, which drives said movement means according to the signal output from said convergence state detection means, and controls the focus position of the light beam so as to be substantially constant; and,

focus jumping means, which moves the focal spot of the light beam from a first data surface on the information carrier to an adjacent second data surface; and wherein

said focus jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said acceleration means, and movement time measurement means which measures the length of time from the initiation of movement of the light beam by said focus jumping means until an intermediate layer or a location near the boundary between said first data surface and said second data surface is reached;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement means; and,

said deceleration means modifies the length of time and the peak value of the deceleration signal based on the amplitude measured by said amplitude measurement means and on the time measured by said movement time measurement means.

26. The optical disc device according to Claim 25, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

27. The optical disc device according to Claim 25, wherein the deceleration signal output by said deceleration means comprises a pulse signal, the time width of said pulse signal is set by multiplying the amplitude ratio of the amplitude measured by said amplitude measurement means to a reference amplitude with a prescribed reference deceleration time, and the peak value of said pulse signal is set by multiplying the ratio of a time width, obtained by multiplying said amplitude ratio by a reference movement time, to the movement time measured by said movement time measurement means, with a prescribed reference peak value.

28. The optical disc device according to Claim 25, wherein said focusing control means comprises gain switching means which modifies the gain intersection point of the control loop, and said focusing control means switches the setting of said gain switching means for a prescribed length of time after operation of the focus jumping means according to the ratio of the amplitude measured by said amplitude measurement means to a reference amplitude.

29. An optical disc device, comprising:

movement means, which moves the focal spot of a light beam focused on an information carrier having a plurality of stacked data surfaces in a direction substantially perpendicular to the data surfaces;

convergence state detection means, which generates a signal according to the convergence state of the light beam;

focusing control means, which drives said movement means according to the signal output from said convergence state detection means, and controls the focus position of the light beam so as to be substantially constant; and,

focus jumping means, which moves the focal spot of the light beam from a first data surface on the information carrier to an adjacent second data surface; and wherein

said focus jumping means comprises acceleration means which applies to said movement means an acceleration signal to accelerate the light beam, deceleration means which applies to said movement means a deceleration signal to decelerate the light beam which has been accelerated by said acceleration means, first amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said acceleration means, second amplitude measurement means which measures the amplitude of the signal output from said convergence state detection means during operation of said deceleration means, and movement time measurement means which measures the length of time from the initiation of movement of the light beam by said focus jumping means until an intermediate layer or a location near the boundary between said first data surface and said second data surface is reached;

said acceleration means modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement means; and,

said deceleration means modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said second amplitude measurement means and on the time measured by said movement time measurement means.

30. The optical disc device according to Claim 29, wherein the acceleration signal output by said acceleration means comprises a pulse signal of prescribed peak value, and the time width of said pulse signal is set by multiplying the ratio of the amplitude measured by said first amplitude measurement means to a reference amplitude with a prescribed reference acceleration time.

31. The optical disc device according to Claim 29, wherein the deceleration signal output by said deceleration means comprises a pulse signal, the time width of said pulse signal is set by multiplying the amplitude ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude with a prescribed reference deceleration time, and the peak value of said pulse signal is set by multiplying the ratio of a time width, obtained by multiplying said amplitude ratio by a reference movement time, to the movement time measured by said movement time measurement means, with a prescribed reference peak value.

32. The optical disc device according to Claim 29, wherein said focusing control means comprises gain switching means which modifies the gain intersection point of the control loop, and said focusing control means switches the setting of said gain switching means for a prescribed length

of time after operation of the focus jumping means according to the ratio of the amplitude measured by said second amplitude measurement means to a reference amplitude.

33. A track jumping control circuit for moving the focal spot of a light beam from a first track on an information carrier to an adjacent second track, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal; and,

an amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a tracking error signal the amplitude of which changes according to the positional relationship between the focal spot of the light beam and a track; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement portion; and,

said deceleration portion modifies the length of time of the deceleration signal based on the amplitude measured by said amplitude measurement portion.

34. A track jumping control circuit for moving the focal spot of a light beam from a first track on an information carrier to an adjacent second track, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal;

a first amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a tracking error signal the amplitude of which changes according to the positional relationship between the focal spot of the light beam and a track; and,

a second amplitude measurement portion which, during deceleration of the light beam by the deceleration signal, measures the amplitude of the tracking error signal; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement portion; and,

said deceleration portion modifies the length of time of the deceleration signal based on the amplitude measured by said second amplitude measurement portion.

35. A track jumping control circuit for moving the focal spot of a light beam from a first track on an information carrier to an adjacent second track, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal;

an amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a tracking error signal the amplitude of which changes according to the positional relationship between the focal spot of the light beam and a track; and,

a movement time measurement portion which measures the length of time from the initiation of movement of the light beam by the acceleration signal until a prescribed location is reached between said first track and said second track; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement portion; and,

said deceleration portion modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said amplitude measurement portion and on the time measured by said movement time measurement portion.

36. A track jumping control circuit for moving the focal spot of a light beam from a first track on an information carrier to an adjacent second track, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by said acceleration signal;

a first amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a tracking error signal the amplitude of which changes according to the positional relationship between the focal spot of the light beam and a track;

a second amplitude measurement portion which, during deceleration of the light beam by the deceleration signal, measures the amplitude of the tracking error signal; and,

a movement time measurement portion which measures the length of time from the initiation of movement of the light beam by the acceleration signal until a prescribed location is reached between said first track and said second track; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement portion; and,

said deceleration portion modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said second amplitude measurement portion and on the time measured by said movement time measurement portion.

37. A focus jumping control circuit for moving the focal spot of a light beam from a first data surface on an

information carrier having a plurality of stacked data surfaces to an adjacent second data surface, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal; and,

an amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a focusing error signal the amplitude of which changes according to the convergence state of the light beam; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement portion; and,

said deceleration portion modifies the length of time of the deceleration signal based on the amplitude measured by said amplitude measurement portion.

38. A focus jumping control circuit for moving the focal spot of a light beam from a first data surface on an information carrier having a plurality of stacked data surfaces to an adjacent second data surface, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal;

a first amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a focusing error signal the amplitude of which changes according to the convergence state of the light beam; and,

a second amplitude measurement portion which, during deceleration of the light beam by the deceleration signal, measures the amplitude of the focusing error signal; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement portion; and,

said deceleration portion modifies the length of time of the deceleration signal based on the amplitude measured by said second amplitude measurement portion.

39. A focus jumping control circuit for moving the focal spot of a light beam from a first data surface on an information carrier having a plurality of stacked data surfaces to an adjacent second data surface, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal;

an amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a focusing error signal the

amplitude of which changes according to the convergence state of the light beam; and,

a movement time measurement portion, which measures the length of time from the initiation of movement of the light beam by the acceleration signal until an intermediate layer or a location near the boundary between said first data surface and said second data surface is reached; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said amplitude measurement portion; and,

said deceleration portion modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said amplitude measurement portion and on the time measured by said movement time measurement portion.

40. A focus jumping control circuit for moving the focal spot of a light beam from a first data surface on an information carrier having a plurality of stacked data surfaces to an adjacent second data surface, comprising:

an acceleration portion which creates an acceleration signal to accelerate the light beam;

a deceleration portion which creates a deceleration signal to decelerate the light beam which has been accelerated by the acceleration signal;

a first amplitude measurement portion which, during acceleration of the light beam by the acceleration signal, measures the amplitude of a focusing error signal the

amplitude of which changes according to the convergence state of the light beam;

a second amplitude measurement portion which, during deceleration of the light beam by the deceleration signal, measures the amplitude of the focusing error signal; and,

a movement time measurement portion, which measures the length of time from the initiation of movement of the light beam by the acceleration signal until an intermediate layer or a location near the boundary between said first data surface and said second data surface is reached; and wherein

said acceleration portion modifies the length of time of the acceleration signal based on the amplitude measured by said first amplitude measurement portion; and,

said deceleration portion modifies the length of time and peak value of the deceleration signal based on the amplitude measured by said second amplitude measurement portion and on the time measured by said movement time measurement portion.